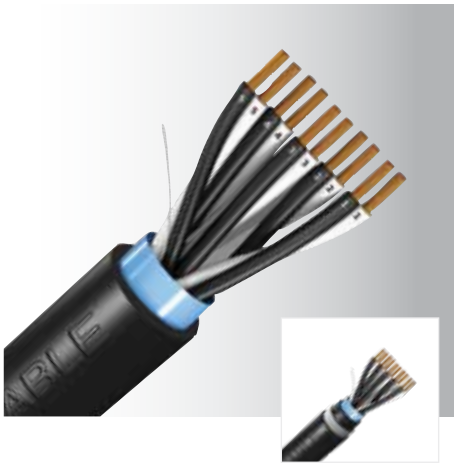
Instrumentation Cables

KEYSTONE CABLE
tel (65) 6367 0107 fax (65) 6365 2963
www.keystone-cable.com

500V Collective Screen
PE Insulated, OS, Unarmoured & Armoured, PVC Sheathed Cable
CU/PE/OS/PVC or CU/PE/OS/PVC/SWA/PVC
Model Code: EOP or EOPSP



Standard Reference	BS EN 50290, BS EN 50288-1 BS EN 50288-7
Flame Retardant Ref.	IEC 60332-1, IEC 60332-3

Application :	This cable is used for the transmission of analogue and digital signals in machineries with measuring instruments and control systems.
Construction :	Plain annealed copper wire, PE insulated, twisted pair or triad, overall aluminium/ polyester tape with tinned copper drain wire screened, unarmoured or galvanized steel wire armoured, PVC bedding and sheathed cable
Insulation Colour :	Pair: Black, White with numbering Triple: Red, Black, White with numbering
Sheath Colour :	Black (Other colour upon request)
Operating Temperature :	70°C

Conductor			Insulation	Unarmoured			Armoured		
Nominal Area	No. of Pair/Triple	Stranded Dia.	Thickness	Part No.	Approx. Overall Dia.	Approx. Weight	Part No.	Approx. Overall Dia.	Approx. Weight
(mm^2)	(no.)	(mm)	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
0.5	1P	0.9	0.6		7.0	57		11.8	232
	2P				10.2	94		15.0	345
	4P				12.2	152		16.4	438
	6P				14.0	178		18.5	527
	8P				15.6	226		20.2	614
	10P				17.5	270		23.0	849
	12P				18.0	307		23.8	902
	16P				20.4	389		26.8	1210
	20P				22.8	482		29.5	1408
	24P				25.4	574		32.0	1605
	36P				29.2	802		36.5	1981
	50P				34.5	1093		42.0	2837
	1T				7.4	66		12.0	244
	4T				13.2	196		18.0	524
	6T				15.5	239		20.0	626
	12T				20.5	411		26.2	1084
	16T				23.0	535		29.5	1462
	36T				33.2	1131		40.8	2807
0.75	1P	1.11	0.6		7.4	67		12.0	255
	2P				10.8	110		15.5	375
	4P				12.5	187		17.5	507
	6P				14.8	222		19.5	594
	8P				16.8	280		22.5	833
	10P				19.0	345		25.0	978
	12P				19.8	386		25.5	1044
	16P				22.2	502		28.5	1407
	20P				25.0	622		31.5	1632
	24P				27.5	741		34.2	1874
	36P				31.6	1043		38.5	2365
	50P				37.5	1424		45.5	3326
	1T				7.8	79		12.5	269
	4T				13.8	236		18.8	586
	6T				16.6	302		22.2	854
	12T				22.2	536		28.0	1268
	16T				24.8	697		31.5	1709
	36T				36.0	1482		43.5	3293

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Conductor			Insulation	Unarmoured			Armoured		
Nominal Area	No. of Pair/ Triple	Stranded Dia.	Thickness	Part No.	Approx. Overall Dia.	Approx. Weight	Part No.	Approx. Overall Dia.	Approx. Weight
(mm^2)	(no.)	(mm)	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.0	1P	1.29	0.6		7.8	77		12.5	272
	2P				11.5	125		16.2	408
	4P				13.2	214		18.0	550
	6P				16.0	269		21.5	796
	8P				18.0	332		23.5	914
	10P				20.5	411		26.2	1083
	12P				21.0	463		27.0	1161
	16P				23.6	603		30.0	1570
	20P				26.5	749		33.0	1823
	24P				29.5	893		36.0	2092
	36P				34.2	1283		41.5	2996
	50P				40.5	1754		48.0	3790
	1T				8.2	85		13.0	288
	4T				14.6	276		19.8	647
	6T				17.8	360		23.2	940
	12T				23.8	649		29.5	1447
	16T				26.6	846		33.2	1937
	36T				38.5	1813		46.2	3749
1.5	1P	1.59	0.6		8.5	95		13.5	304
	2P				12.5	152		17.8	478
	4P				14.5	267		19.5	631
	6P				17.5	346		23.0	915
	8P				19.8	442		25.5	1100
	10P				22.6	547		29.0	1473
	12P				23.4	613		30.0	1588
	16P				26.2	812		32.8	1882
	20P				29.2	1008		36.0	2222
	24P				32.5	1202		40.0	2857
	36P				37.8	1736		45.5	3640
	50P				44.8	2377		54.0	5175
	1T				9.0	106		13.5	330
	4T				16.4	358		22.0	898
	6T				19.6	480		25.5	1127
	12T				26.4	879		33.0	1953
	16T				29.5	1149		36.2	2348
	36T				43.0	2494		51.5	5140
2.5	1P	2.01	0.7		10.0	135		14.5	380
	2P				14.5	215		19.5	580
	4P				17.2	375		23.0	942
	6P				20.5	504		26.5	1190
	8P				23.4	648		30.0	1446
	10P				27.0	822		34.0	1935
	12P				27.8	942		35.0	2097
	16P				31.2	1219		38.4	2520
	20P				35.0	1513		43.0	3318
	24P				39.2	1823		47.4	3851
	36P				45.2	2636		55.0	5463
	50P				54.0	3622		63.5	7031
	1T				10.4	167		15.5	413
	4T				19.2	528		25.0	1173
	6T				23.2	707		30.0	1673
	12T				31.5	1336		38.5	2658
	16T				35.2	1736		43.0	3542
	36T				51.5	3802		61.0	7043

Note : For technical specification, please refer to Table 9 to 13 (Page 69)

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Table 9 : Electrical Characteristics for Instrumentation Cables

Material	PVC	PE	XLPE	XLEVA	V-90
Max. Conductor Operating Temperature (°C)	70	70	90	105	90
Min. Ambient Temperature (°C)	-15	-15	-15	-15	-15
Max. Working Voltage (r.m.s)	300/500V	300/500V	300/500V	300/500V	300/500V
Test Voltage (1 minute)	2000 V R.M.S between conductors and screen/armour				
Min. Insulation Resistance (mΩ/km)	10	1000	1000	10	10

Table 10 : Conductor Resistance @ 20 °C

Conductor			Plain		Tinned	
Size	Class	Stranding	Single/Multi-Core	Multi-Pair/Triple	Single/Multi-Core	Multi-Pair/Triple
mm^2	-	no./mm	-	-	-	-
0.5	1	1/0.80	36.0	36.7	36.7	37.1
	2	7/0.30	36.0	36.7	36.7	37.1
	5	16/0.20	39.0	39.7	40.1	40.9
0.75	1	1/0.97	24.5	25.0	24.8	25.3
	2	7/0.37	24.5	25.0	24.8	25.3
	5	24/0.20	26.0	26.5	26.7	27.2
1.0	1	1/1.13	18.1	18.4	18.2	18.6
	2	7/0.43	18.1	18.4	18.2	18.6
	5	32/0.20	19.5	19.9	20.0	20.4
1.5	1	1/1.38	121	12.3	12.2	12.4
	2	7/0.53	12.1	12.3	12.2	12.4
	5	30/0.25	13.3	13.6	13.7	14.0
2.5	1	1/1.78	7.41	7.6	7.56	7.71
	2	7/0.67	7.41	7.6	7.56	7.71
	5	50/0.25	8.0	8.1	8.212	8.37

Table 11 : Maximum Inductance to Resistance Ratio (L/R)

Conductor	
Size	L/R Ratio (for adjacent cores)
mm^2	μH/Ω
0.50	25
0.75	25
1.0	25
1.5	40
2.5	60

Table 12 : Maximum Mutual Capacitance Values

Conductor Size	Type of Material	Requirement
mm^2	-	nF/km
0.5	PE XLPE XLEVA	150
0.75		
1.0		
1.5		
2.5	PVC	250

Table 13 : Minimum Bending Radius

Cable Type	Unarmoured	Armoured
Collective Screen (OS)	8D	10D
Individual and Overall Screen (ISOS)	8D	10D